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EXAMINER

ZHEN, LI B

ART UNIT PAPER NUMBER

2126

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/732,087

Applicant(s)

MILLER ET AL.

Examiner

Li B. Zhen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/4/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1 – 34 are pending in the application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 22 – 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- i. Claims 29 – 30 are indefinite because it is unclear whether these are storage medium, computer system, or method claims because they depend on a method claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1 – 10, 12 – 18, 20 – 25 and 27 – 34 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent NO. 5,913,038 to Griffiths [cited in the previous office action].**

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6. As to claim 1, Griffiths teaches a system comprising: a plurality of sources [source file 38 containing multimedia data, Fig. 1; col. 8, lines 15 – 26] and an interface [set of OLE Component Object Model (COM) interfaces 204 to allow communications between the filter graph and the application program 37A, Fig. 2; col. 10, lines 33 – 46], selectively coupled [selecting a suitable reader filter to read the source file, filters can be selected, loaded, and connected in successive fashion; col. 13, lines 1 – 10] to the plurality of sources [a direct call to the interfaces 204 to control the media stream; col. 10, lines 34 – 46], to generate and implement a development project of processing chains [filter graphs; col. 11, lines 55 – 67] at least one chain of which comprises multiple filters [filter graph 203, typically comprises a linked collection of filter components of different types; col. 10, lines 45 – 66], wherein the interface loads a processing chain for each of the plurality of media sources at a point during the execution of the project when the chain is required [To render a source file...the filter graph manager 202 builds a filter graph comprising connected filter components...filter graph manager 202 first examines the source file 216 to determine the file type and the type(s) of data stored in the source file...Based on the media type and the location of the file (local or remote storage medium), the filter graph manager can select an appropriate file reader filter...filter graph manager 220 then instructs a file loader to load the file reader filter; col. 13, line 29 – col. 14, line 15], and wherein the interface is configured to unload at least a subset of the chains when they are not required [the "YES" branch is followed to step 726 and the selected filter is unloaded; col. 21, lines 1 – 10].

7. As to claim 2, Griffiths teaches the interface is a render engine exposed to a media processing system implemented on a computing system [multimedia filter graph module (MFG module), also known as a filter graph manager, allows users to play multimedia, such as digital movies encoded using the MPEG digital video compression standard, on a computer system; col. 6, lines 5 – 30].

8. As to claim 3, Griffiths teaches an application program [application program 37A], coupled to the interface [interfaces 204], to enable a user to define a media processing project [the application program 37A, can make a direct call to the interfaces 204 to control the media stream or to retrieve filter events; col. 10, lines 34 – 45].

9. As to claim 4, Griffiths teaches the interface only loads those processing chains required during the next M seconds of project execution [At recursion Level 1, the transform filter 806 is located, loaded, and connected to the first output of the splitter filter 804; col. 23, line 34 – col. 24, line 67] if the currently loaded chain-count does not exceed a threshold T [recursion count is less than a predetermined threshold, a search is conducted to locate an available filter; col. 23, lines 3 – 19] where M and T are greater than 0. Examiner notes the limitation “next M seconds” does not define a specific range and is very broad. Examiner interprets “next M seconds” as the arbitrary amount of time required to execute each recursion level of the Griffiths reference.

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Griffiths loads only the required filter at each recursion level [see col. 23, line 34 – col. 24, line 67].

10. As to claim 5, Griffiths teaches M is less than a time required to load a processing chain [At recursion Level 1, the transform filter 806 is located, loaded, and connected to the first output of the splitter filter 804; col. 23, line 34 – col. 24, line 67]. Examiner interprets “next M seconds” as the amount of time required to execute each recursion level of the Griffiths reference [see claim 4 above]. Since M seconds is the amount of time required to execute each recursion level and each recursion level loads a part of the processing chain, then M is less than the time required to load the entire processing chain.

11. As to claim 6, Griffiths teaches if the currently loaded chain-count has reached a threshold, T, [chain already includes the predetermined number of maximum filters] the interface identifies one or more currently loaded chains that can be unloaded [If the chain already includes the predetermined number of maximum filters and has not yet reached a termination point...then this filter is rejected and another search of the table is conducted to find a replacement filter...If a match is not found, then the last filter in the chain is disconnected (and typically eventually unloaded); col. 3, lines 39 - 60].

12. As to claim 7, Griffiths teaches the interface identifies one or more currently loaded chains [present filter] that will not be used during the next N seconds to unload

[If a match is not found, then the filter graph manager 202 coordinates disconnecting (and typically unloading) the present filter and completes another search of the table to locate a replacement filter; col. 14, lines 13 - 29], where N is greater than 0. Examiner notes the limitation "next N seconds" does not define a specific range and is very broad. Examiner interprets "next N seconds" as the amount of time remaining to complete construction the filter graph of the Griffiths reference. Griffiths teaches unloading a present filter if a matching filter is not found to connect to the present filter [col. 14, lines 13 - 29]. Since the unloaded filter will not be used as part of the filter graph, it will not be used for the "next N seconds."

13. As to claim 8, Griffiths teaches M [amount of time required to execute each recursion level, see claim 4] is less than N [amount of time remaining to complete construction the filter graph, see claim 7].

14. As to claim 9, Griffiths teaches the interface determines whether the identified one or more chains will be required during subsequent execution of the project or in a future project [if the filter graph manager 202 operates to load a particular filter, and this filter fails to connect to another filter in the chain, then, rather than unloading that filter, it is kept in memory storage and placed on the list of spare filters. If the filter graph manager 202 subsequently selects a filter of that type for another part of the graph, then, rather than reloading it, this filter is used in response to information stored in the Spares list; col. 14, lines 39 - 50] and, if so caches the identified chain(s) ["Spares list"]

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is maintained in memory to track all previously loaded but rejected filters; col. 14, lines 39 – 50].

15. As to claim 10, Griffiths teaches the interface determines whether unloading of the identified one or more chains reduces the chain-count below a maximum allowable threshold, V, and, if so, loads the chains required in the next M seconds [In the event that the recursion count is less than or equal to the predetermined threshold, then the "NO" branch is followed from step 704 to step 708. In step 708, a search is conducted to locate a filter that may accept the selected output as an input; col. 20, lines 15 – 46], where V is greater than 0. As to the limitation "the next M seconds," see the rejection to claim 4 above.

16. As to claim 12, Griffiths teaches the interface removes the identified chains from the active project and caches the removed chains ["Spares list" is maintained in memory to track all previously loaded but rejected filters; col. 14, lines 39 – 50].

17. As to claim 13, this is rejected for the same reasons as claim 4 above.

18. As to claim 14, Griffiths teaches the interface unloads a chain when all matrix switch filter(s) of the filter graph provide an indication that the chain is no longer required [At the end of the entire operation, any filters still on the Spares list are discarded and thereby unloaded; col. 21, lines 9 – 32].

19. As to claims 15 and 16, Griffiths teaches setting T equal to one, the interface will be required to search for and potentially unload chains which are not required to support execution of the project for the next N seconds [If a match is not found, then the filter graph manager 202 coordinates disconnecting (and typically unloading) the present filter and completes another search of the table to locate a replacement filter; col. 14, lines 13 - 29]. As to the limitation "the next N seconds," see the rejection to claim 7 above.

20. As to claim 17, Griffiths teaches a method for generating and managing a development project [embodiment of the present invention is represented by Microsoft's "ACTIVE MOVIE" Software Development Kit; col. 5, line 60 – col. 6, line 5], the method comprising:

identifying processing chains required to support execution of the development project over the next M seconds [At recursion Level 1, the transform filter 806 is located, loaded, and connected to the first output of the splitter filter 804; col. 23, line 34 – col. 24, line 67]; and

loading the identified processing chains as long as a currently loaded chain-count does not exceed an initial threshold, T [recursion count is less than a predetermined threshold, a search is conducted to locate an available filter; col. 23, lines 3 – 19], wherein T and M are greater than 0. Examiner notes the limitation "next M seconds" does not define a specific range and is very broad. Examiner interprets "next M

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seconds” as the amount of time required to execute each recursion level of the Griffiths reference. Griffiths loads only the required filter at each recursion level [see col. 23, line 34 – col. 24, line 67].

21. As to claim 18, this is rejected for the same reasons as claim 7 above.

22. As to claim 20, this is rejected for the same reasons as claim 9 above.

23. As to claim 21, Griffiths teaches T is set to one such that an implementing a media processing system always attempts to unload unused chains prior to loading chains [If a match is not found, then the filter graph manager 202 coordinates disconnecting (and typically unloading) the present filter and completes another search of the table to locate a replacement filter; col. 14, lines 13 - 29].

24. As to claim 22, Griffiths teaches identifying each of a plurality of sources [source file 38 containing multimedia data, Fig. 1; col. 8, lines 15 – 26] required to satisfy the media processing project;

determining when one or more chain(s) [selecting a suitable reader filter to read the source file, filters can be selected, loaded, and connected in successive fashion; col. 13, lines 1 – 10] associated with each of the plurality of sources [filter graph 203, typically comprises a linked collection of filter components of different types; col. 10,

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lines 45 – 66] is required to support execution of the media processing project [a direct call to the interfaces 204 to control the media stream; col. 10, lines 34 – 46]; and

selectively loading [load the file reader filter] and unloading [the "YES" branch is followed to step 726 and the selected filter is unloaded; col. 21, lines 1 – 10] each of the chains during execution of the filter graph based, at least in part, on when each of the chains are required to support execution of the media processing project [To render a source file...the filter graph manager 202 builds a filter graph comprising connected filter components...filter graph manager 202 first examines the source file 216 to determine the file type and the type(s) of data stored in the source file...Based on the media type and the location of the file (local or remote storage medium), the filter graph manager can select an appropriate file reader filter...filter graph manager 220 then instructs a file loader to load the file reader filter; col. 13, line 29 – col. 14, line 15], at least some selectively loaded [col. 2, lines 16 – 33] and unloaded chains [col. 21, lines 23 – 32] comprising multiple filters [col. 10, lines 45 – 66].

25. As to claim 23, this is rejected for the same reasons as claims 17 above.

26. As to claim 24, Griffiths teaches identifying one or more processing chains [present filter] that will not be required in the next N seconds [If a match is not found, then the filter graph manager 202 coordinates disconnecting (and typically unloading) the present filter and completes another search of the table to locate a replacement filter; col. 14, lines 13 – 29] if the chain-count threshold T has been reached [If the chain

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already includes the predetermined number of maximum filters and has not yet reached a termination point...then this filter is rejected and another search of the table is conducted to find a replacement filter; col. 3, lines 39 - 60], wherein N is greater than 0; and

removing the identified one or more processing chains from the processing project [If a match is not found, then the last filter in the chain is disconnected (and typically eventually unloaded); col. 3, lines 39 – 60]. Note the rejection to claim 7 above with regards to the examiner's interpretation of the limitation "next N seconds."

27. As to claim 25, this is rejected for the same reasons as claim 9 above.

28. As to claim 27, Griffiths teaches V [limit of the number of filters in a chain length can be set, typically a maximum threshold of five filters; col. 3, lines 40 – 60] is greater than T [recursion counter; col. 20, lines 15 – 46].

29. As to claim 28, this is rejected for the same reason as claim 15 above.

30. As to claim 29, Griffiths teaches a storage medium comprising a plurality of executable instructions which, when executed, implement a method according to claim 22 [instructions for building that graph are stored in memory for possible subsequent use to construct the filter graph; col. 5, lines 8 – 26].

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31. As to claim 30, Griffiths teaches a storage medium having stored therein a plurality of executable instructions [instructions for building that graph are stored in memory for possible subsequent use to construct the filter graph; col. 5, lines 8 – 26]; and

an execution unit [processor], coupled to the storage medium, to execute at least a subset of the plurality of executable instructions to implement a method according to claim 22 [processes and operations performed by the computer include the manipulation of signals by a processor and the maintenance of these signals within data sets or data structures resident in one or more memory storage devices; col. 6, lines 43 – 67].

32. As to claim 31, this is a product claim that corresponds to method claim 17; note the rejection to claim 17 above, which also meets this product claim.

33. As to claim 32 – 34, these are rejected for the same reasons as claims 18, 16 and 9 respectively, note the rejections to claims 18, 16 and 9 above.

Claim Rejections - 35 USC § 103

34. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

35. Claims 11, 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griffiths in view of U.S. Patent NO. 5,790,935 to Payton [cited in the previous office action].

36. As to claim 11, Griffiths teaches unloading processing chain(s) [If the chain already includes the predetermined number of maximum filters and has not yet reached a termination point...then this filter is rejected and another search of the table is conducted to find a replacement filter...If a match is not found, then the last filter in the chain is disconnected (and typically eventually unloaded); col. 3, lines 39 - 60] and V is greater than 0, but does not specifically teach unloading low priority chains.

37. However, Payton teaches a multimedia system [virtual on-demand digital information delivery system; col. 5, lines 60 – 67] that unloads low priority chains [filter deletes the lowest priority item from storage (step 140) and determines whether there is enough storage for the new item (step 142). If not, the filter returns to step 140 and deletes the next lowest priority item; col. 8, lines 25 – 50].

38. It would have been obvious to a person of ordinarily skilled in the art at the time of the invention to apply the teaching of unloading low priority chains as taught by Payton to the invention of Griffiths because this provides a scheduling policy that allows higher priority chains to execute before lower priority chains.

39. As to claims 19 and 26, Griffiths as modified teaches determining whether the chain-count has dropped below a maximum allowable chain-count, V, after removing

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the identified chains from the development project [In the event that the recursion count is less than or equal to the predetermined threshold, then the "NO" branch is followed from step 704 to step 708. In step 708, a search is conducted to locate a filter that may accept the selected output as an input; col. 20, lines 15 – 46 of Griffiths], where V is greater than 0;

identifying one or more low priority chains and removing them from the development project [filter deletes the lowest priority item from storage (step 140) and determines whether there is enough storage for the new item (step 142). If not, the filter returns to step 140 and deletes the next lowest priority item; col. 8, lines 25 – 50 of Payton]; and

loading the chains required in the next M seconds [In step 708, a search is conducted to locate a filter that may accept the selected output as an input; col. 20, lines 15 – 46 of Griffiths]. As to the limitation "the next M seconds," see the rejection to claim 4 above.

Response to Arguments

40. Applicant's arguments filed July 01, 2004 have been fully considered but they are not persuasive.

In response to the Non-Final Rejection dated April, 6, 2004, applicant argues:

(1) Griffiths describes the process of initially building a filter graph for rendering a project while Applicant's disclosure permits dynamic graph building during execution of the filter graph [p. 16, lines 16 – 21];

(2) interface is configured, as recited in the claim, to unload a subset of the chains when they are not required, which subset can include a chain that comprises multiple filters [p. 25, lines 4 – 7];

(3) Griffiths describes removing a single filter in its graph building process and not a chain of filters [p. 25, lines 12 – 14];

(4) the amount of time required to execute each recursion level in Griffiths does not identify processing chains required to support execution of the development project over the next M seconds [p. 26, lines 15 – 19];

(5) Griffiths' recursion count has nothing to do with the recited chain count [p. 27, lines 1 – 2 and p. 28, lines 12 - 17];

(6) Griffiths discusses unloading a single filter and not a chain comprising multiple filters [p. 27, lines 22 – 25]; and

(7) claims 29 and 30 are not indefinite because they are known as Beauregard claims.

As to argument (1), examiner respectfully disagrees and submits that Griffiths teaches building a filter graph during a rendering project [col. 25, line 55 – col. 26, line 12]. Examiner notes that Griffiths teaches selecting filters [steps 2 – 6], rendering the data streams [step 8], and adding new filters to the filter graph as the rendering process progresses [step 9]. Therefore, the filter graph of Griffiths is dynamically built because filters are connected and disconnected to the filter graph [steps 3 – 7] during the rendering process.

In response to argument (2), examiner notes that claim 1 recites unloading a subset of the chains but does not require the subset to include a chain that comprises multiple filters. Griffiths teaches unloading a subset of the chains [see the rejection to claim 1 above].

As to argument (3), examiner notes that a single filter would read on a subset of the chain of filters because the single filter is a subset of the chain of filters. A subset of a set can be any number of elements from the set. For example, let's assume a chain of filters [A, B, C]. When filter A is removed, then the subset [A] is removed from the chain of filters. The set [A] is a subset of the set [A,B,C].

As to argument (4), examiner respectfully disagrees and submits that Griffiths teaches identifying processing chains [transform filter] required to support execution of the development project [At recursion Level 1, the transform filter 806 is located, loaded, and connected to the first output of the splitter filter 804; col. 23, line 34 – col. 24, line 67] over the next M seconds [amount of time required to execute recursion level]. Examiner equated the amount of time required to execute the recursion level to “the next M seconds”. It appears the applicant's invention is divided into execution intervals of M seconds, which is equivalent to Griffiths' recursion levels. The filters are loaded as needed for each execution interval of M seconds, and Griffiths loads only the required filter at each recursion level [see col. 23, line 34 – col. 24, line 67]. Therefore, the amount of time needed to execute Griffiths' recursion level would read on the limitation the next M seconds.

In response to argument (5), applicant does not explain why examiner's mapping of Griffiths to the claimed limitations is not proper. Examiner respectfully notes that broadly interpreted, Griffiths teaches the recited limitation. Another part of the Griffiths' disclosure that teaches the recited limitation can be found at col. 14, lines 13 – 26; col. 15, lines 8 – 20; and col. 15, line 65 – col. 16, line 65.

As to argument (6), examiner respectfully disagrees and submits that Griffiths teaches unloading a chain comprising multiple filters [col. 21, lines 23 – 32; see also the rejection to claim 22 above].

As to argument (7), examiner was unable to locate any discussion of Beauregard claims in the MPEP. Claims 29 and 30 appears to be corresponding product and system claims of method claim 22. If this is the applicant's intention, then the applicant should rewrite claims 29 and 30 in independent form including all the steps of claim 22 and submit any necessary fees for the additional independent claims. Claims 29 and 30 remain rejected as being indefinite. Additionally, claims 29 and 30 may additionally be objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 29 and 30 does not further limit the subject matter of claim 22 because they recite a computer readable medium and a computing system, which does not add to the recited method claim 22.

Conclusion

41. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

42. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

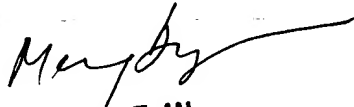
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Li B. Zhen
Examiner
Art Unit 2126

lbz


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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100